



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p><b>(21) International Application Number:</b> PCT/US98/27233</p> <p><b>(22) International Filing Date:</b> 21 December 1998 (21.12.98)</p> <p><b>(30) Priority Data:</b></p> <table border="0"> <tr> <td>60/068,562</td> <td>23 December 1997 (23.12.97)</td> <td>US</td> </tr> <tr> <td>09/215,257</td> <td>18 December 1998 (18.12.98)</td> <td>US</td> </tr> </table> <p><b>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications</b></p> <table border="0"> <tr> <td>US</td> <td>60/068,562 (CON)</td> </tr> <tr> <td>Filed on</td> <td>23 December 1997 (23.12.97)</td> </tr> <tr> <td>US</td> <td>09/215,257 (CON)</td> </tr> <tr> <td>Filed on</td> <td>18 December 1998 (18.12.98)</td> </tr> </table> <p><b>(71) Applicants (for all designated States except US):</b> THE CARNEGIE INSTITUTE OF WASHINGTON [US/US]; 1530 P Street, N.W., Washington, DC 20005 (US); THE UNIVERSITY OF MASSACHUSETTS [US/US]; One Beacon Street, Boston, MA 02108 (US).</p> <p><b>(72) Inventors; and</b></p> <p><b>(75) Inventors/Applicants (for US only):</b> FIRE, Andrew [US/US]; 2320 Bright Leaf Way, Baltimore, MD 21210 (US). XU, Siqun [CN/US]; 1755 Warminton Court, Baltwin, MO</p>		60/068,562	23 December 1997 (23.12.97)	US	09/215,257	18 December 1998 (18.12.98)	US	US	60/068,562 (CON)	Filed on	23 December 1997 (23.12.97)	US	09/215,257 (CON)	Filed on	18 December 1998 (18.12.98)	<p>63021 (US). MONTGOMERY, Mary, K. [US/US]; 233 Macalester Street, St. Paul, MN 55105 (US). KOSTAS, Stephen, A. [US/US]; 126 East Melrose Avenue, Baltimore, MD 21212 (US). TIMMONS, Lisa [US/US]; 2408 Brambleton Road, Baltimore, MD 21209 (US). TABARA, Hiroaki [JP/US]; Apartment #1, 145 Orient Street, Worcester, MA 01604 (US). DRIVER, Samuel, E. [US/US]; Apartment #4, 1714 Commonwealth Avenue, Brighton, MA 02135 (US). MELLO, Craig, C. [US/US]; 19 Ryan Road, Shrewsbury, MA 01545 (US).</p> <p><b>(74) Agents:</b> KOKULIS, Paul, N. et al.; Pillsbury Madison &amp; Sutro LLP, 1100 New York Avenue, N.W., Washington, DC 20005 (US).</p> <p><b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b>  <i>With international search report.        Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>
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<p><b>(54) Title:</b> GENETIC INHIBITION BY DOUBLE-STRANDED RNA</p> <p><b>(57) Abstract</b></p> <p>A process is provided of introducing an RNA into a living cell to inhibit gene expression of a target gene in that cell. The process may be practiced <i>ex vivo</i> or <i>in vivo</i>. The RNA has a region with double-stranded structure. Inhibition is sequence-specific in that the nucleotide sequences of the duplex region of the RNA and of a portion of the target gene are identical. The present invention is distinguished from prior art interference in gene expression by antisense or triple-strand methods.</p>																